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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Zhao, et al.	) Group Art Unit : 1712
Appl. No.	:	09/943,217	)
Filed	:	August 29, 2001	)
For	:	CATALYST FOR PRODUCING ALIPHATIC POLYCARBONATE AND THE PREPARATION THEREOF	)
Examiner	:	Buttner, David	

DECLARATION UNDER 37 C.F.R. § 1.132

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

I, Xiaojiang Zhao, declare as follows

1. I am an inventor in the above-identified application. I am familiar with U.S. Application No. 09/943,217 and the Office Action of October 7, 2003. The following experiments were done by me or under my direct supervision.

2. An experiment was carried out under the conditions of Example 1 except that the catalyst was not aged. Unaged neodymium trichloroacetate / diethyl zinc/glycerin (containing 0.00075 mol neodymium trichloroacetate, 0.015 mol $ZnEt_2$, 0.015 mol glycerin, and 0.150mol propylene carbonate, CO_2 atmosphere) was used as the catalyst. The catalyst and 80 ml propylene oxide were put into the autoclave in the absence of oxygen, quickly filling in CO_2 and maintaining the pressure at 30 atmosphere. The polymerization was carried out at 70 °C for 10 hrs. The polymerization reaction was terminated as in Example 1. Propylene oxide conversion was 51.7%. The final yield of white polycarbonate was 45.2 g (6.03×10^4 g polymer /mol Nd), ^{1}H-

NMR measurement: content of alternative sequence structure is 95%. Mn=44,000; the glass transition temperature is 38.7 °C.

3. An experiment was carried out under the conditions of Example 6 except that the catalyst was not aged. Unaged mixed rare earth metal trichloroacetate/ di-n-propyl zinc / glycerin (containing 0.00075 mol rare earth metal trichloroacetate, 0.0015 mol glycerin, 0.015 mol di-n-propyl zinc, and 0.150 mol propylene carbonate, CO_2 atmosphere) as used as the catalyst. The catalyst and 80 ml propylene oxide were put into the autoclave in the absence of oxygen, quickly filling in CO_2 and maintaining the pressure at 30 atmosphere. The polymerization was carried out at 100 °C for 10 hrs. The polymerization reaction was terminated as in Example 1. The final yield of white polycarbonate was 45.2 g (6.03×10^4 g polymer / mol RE), ^{1}H-NMR measurement: content of alternative sequence structure is 93%. Mn=29,500; the glass transition temperature is 35 °C.

4. When the experiments of paragraphs 2 and 3 above are compared to the experiments of Examples 1 and 6, respectively, in the specification of the 09/943,217 application, an increase in the activity of the catalyst of 20%-30% is observed.

5. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States codes and that such willful, false statements may jeopardize the validity of the application or patent issuing therefrom.

Dated: 04-29-2004

By: Xiaojiang Zhao

Xiaojiang Zhao

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